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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,246	06/20/2003	Paolo Guiseppe Fazzini	R&G 360	5552

23474 7590 10/17/2006

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EXAMINER

YENKE, BRIAN P

ART UNIT PAPER NUMBER

2622

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/600,246

Applicant(s)

FAZZINI, PAOLO GUISEPPE

Examiner

BRIAN P. YENKE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment (11 Sep 06).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4,6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 11 Sep 06 have been fully considered but they are not persuasive.

#### *Applicant's Arguments*

a) Regarding Dougall, the applicant states that amended independent claim 1 that the average of the lowest different value is compared "with a range of values defined by the values of the pixels above and below the pixel to be inserted, and clamping the value of the pixel to be inserted to a point in the range in dependence on the result of the comparison". Applicant states that Dougalls process of interpolation is essentially complete once the gradient vecator associated with the smallest normalized difference is determined.

b)-c) Applicant states that neither Yamashita nor Hong disclose the claims (as amended).

#### *Examiner's Response*

a) The examiner disagrees. Dougall discloses nine shift detectors (Fig 11, and description) produces an average NAD (normalized absolute difference) value which is provided by smallest shift selector 26 (which selects the smallest average NAD), this value is subsequently produced to vector filter 28, sample delays 38,40,42,44, which is subsequently vertically interpolated filteres (via 46) subsampled (50), and evaluated via a horizontal predictor 66 and a vertical interpolation (via 56, 58) to produce an interpolated output. Thus the end of the process is not the calculation of the lowest average NAD which is used/compared/processed. Also, given the broadest reasonable interpretation of the claim, the claim merely calls for "wherein the step

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of selecting the value of the pixel to be inserted includes...”, Dougall clearly discloses that the lowest avg NAD value is selected, based upon the avg NAD values being compared with each other (including the lowest difference value and values of pixels above and below), wherein the clamped value is dependent on the comparison.

b-c) The examiner disagrees. As stated above with respect to a, the claim given it's broadest interpretation merely recites “wherein the step of selecting the value of the pixel to be inserted includes comparing the average value of the pair of pixels with the lowest difference value with a range of value defined by the values above and below the pixel to be inserted, and clamping the value of the pixel to be inserted to a point in the range in dependence on the results of the comparison”. Since both Yamashita and Hong disclose that difference values for pairs of pixels are computed (meeting limitation a), determining the amount of the differences (highest to lowest, (meeting limitation b), selecting the lowest value (meeting limitation c), wherein both Hong and Yamashita compares the average value of the pair of pixels with the lowest upto highestt difference values, with the range of value of the other pixels (i.e. above/below/adjacent etc...) and clamping the value of the desired pixel location in this range (meeting limitation d). Thus although the applicant's may perform additional steps after selecting the lowest average difference pair of pixels, the claims only recites what's included in the selection of the lowest average difference pair of pixels.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3a. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Dougall et al., US 5,019,903.

In considering claims 1-7,

Dougall discloses Figures 1-6, that pixels in multiple rows both diagonally, and those vertical of the pixel to be interpolated (x in the drawings) is performed, by deriving a difference value (absolute value) between each of the points, where the determined lowest average difference value vector is the selected (col 4, line 41-67, col 7, line 54-62) gradient vector chooses for interpolation. As shown in the figures the values of the pixels above and below the pixel to be inserted/interpolated is computed.

3b. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita et al., US 5,347,509.

In considering the above claims, Yamashita discloses a conventional interpolation scheme for converting interlaced to progressive (Figs 12, 13) where the differences between pixels ( $A_{n-1}-C_{n+1}$ ,  $A_n-C_n$ ,  $A_{n+1}-C_{n-1}$ ) are derived and compares the level difference where the lowest value is selected, and the interpolated pixels is computed using the average of the pixel values in that direction (col 2, line 1-27). The averages of the values are the values of pixels

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which are above and below the pixel to be inserted/interpolated as shown in the drawing, where the steps are only performed for the pixel regions as shown.

3c. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong, US 5,708,474

In considering the above, claims Hong discloses (Figs 10-11) that the pixels values above and below the interpolated/inserted pixel value are determined and the average of the smallest different is selected in considering the vertical, horizontal, and diagonal variations of the video signal on a 3D region (col 6, line 1-67).

#### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (571)272-7359. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, David L. Ometz, can be reached at (571)272-7593.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(571)-273-8300**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is  
(703)305-HELP.

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certain documents. Customer service representatives are available to answer questions, send materials or connect customers with other offices of the USPTO from 8:30 a.m. - 8:00p.m. EST/EDT, Monday-Friday excluding federal holidays.

For other technical patent information needs, the Patent Assistance Center can be reached through customer service representatives at the above numbers, Monday through Friday (except federal holidays) from 8:30 a.m. to 5:00 p.m. EST/EDT.

The Patent Electronic Business Center (EBC) allows USPTO customers to retrieve data, check the status of pending actions, and submit information and applications. The tools currently available in the Patent EBC are Patent Application Information

Retrieval (PAIR) and the Electronic Filing System (EFS).

PAIR (<http://pair.uspto.gov>) provides customers direct secure access to their own patent application status information, as well as to general patent information publicly available. EFS allows customers to electronically file patent application documents securely via the Internet. EFS is a system for submitting new utility patent applications and pre-grant publication submissions in electronic publication-ready form. EFS includes software to help customers prepare submissions in extensible Markup Language (XML) format and to assemble the various parts of the application as an electronic submission package. EFS also allows the submission of Computer Readable Format (CRF) sequence listings for pending biotechnology patent applications, which were filed in paper form.

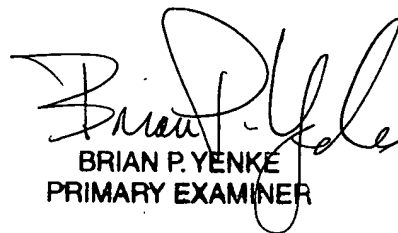


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A stylized handwritten signature consisting of the letters 'B.P.Y.' in a cursive script.

B.P.Y

14 October 2006

A handwritten signature in cursive script that reads 'Brian P. Yenke'. Below the signature, the name and title are printed in a sans-serif font.

BRIAN P. YENKE  
PRIMARY EXAMINER